CONTINUING EDUCATION

Learning Objectives

After completion of this exercise, the participant will be able to:

1. Evaluate factors that appear related to practice success in terms of net income and case starts.
2. Superimpose the dental roots from a cone-beam computed tomography (CBCT) scan onto a digital scan of the crowns to produce a three-dimensional virtual setup.
3. Compare various techniques for erupting labially impacted upper central incisors in the mixed dentition.
4. Describe a rapid-prototyping method for creating a 3D replica of an impacted tooth to be used in autotransplantation.

Article 1

Keim, R.G.; Gottlieb, E.L.; Vogels, D.S. III; and Vogels, P.B.: *2015 JCO Orthodontic Practice Study* (pp. 685-695)

1. Compared to respondents with low net income, those with high net income reported:
    a) less than twice as much net income per case
    b) approximately two and a half times as much net income per case
    c) more than three times as much net income per case
    d) approximately five times as much net income per case
2. Among the management methods surveyed, the low net income practices were significantly less likely than other practices to use:
    a) measurement of staff productivity
    b) office policy manual
    c) patient satisfaction surveys
    d) cases beyond estimate report
3. Among the practice-building methods surveyed, overhead was significantly lower for users of on-time appointments and:
    a) participation in community activities
    b) no-charge diagnostic records
    c) on-time case finishing
    d) advertising in local newspapers
4. Practices with the highest numbers of case starts reported significantly higher percentages of their referrals from:
    a) GPs
    b) other dental specialists
    c) patients and parents
    d) the Internet

Article 2

Lee, R.J.; Pham, J.; Weissheimer, A.; and Tong, H.: *Generating an Ideal Virtual Setup with Three-Dimensional Crowns and Roots* (pp. 696-700)

5. In the authors' technique, threshold segmentation is performed on each individual tooth to create:
    a) physical casts
    b) 3D virtual models
    c) a CBCT scan
    d) stereolithography files
6. Each individually segmented CBCT tooth is superimposed onto the corresponding:
    a) crown of the laser-scanned initial setup
    b) crown of the physical setup
    c) root of the CBCT scan
    d) iterative closest-point algorithm

7. Although the initial cast setup was considered satisfactory to the authors, the addition of the roots revealed:
   a) errors in crown angulation
   b) errors in root angulation
   c) root dilacerations
   d) all of the above

8. Even after performing this 3D virtual setup, the orthodontist may decide to leave the roots uncorrected in:
   a) some cases to accommodate crown positions
   b) cases involving abnormal crown shapes
   c) cases involving root dilacerations
   d) any of the above

Article 3

Manasse, R.J.; Atsawasuwan, P.; and Conroy, C.: *Treatment of Labially Impacted Upper Central Incisors* (pp. 701-710)

9. In a mixed-dentition patient with an impacted upper central incisor, a Haas-type expander may stimulate incisor eruption by:
   a) promoting dental tipping
   b) applying mechanical forces
   c) activating the transseptal fibers
   d) avoiding incisor proclination

10. The screw assembly is covered with a light-cured bridge after active expansion to:
   a) prevent irritation to the tongue
   b) keep food from being trapped in the screw
   c) hold the appliance in a solid horizontal plane
   d) all of the above

11. Causes of upper-central-incisor impaction may include any of the following except:
   a) ankylosis
   b) missing permanent teeth
   c) tooth- and arch-size discrepancies
   d) supernumerary teeth

12. The probability of spontaneous eruption of an impacted upper central incisor is determined by the tooth's:
   a) initial location

   b) axial inclination
   c) degree of root formation
   d) all of the above

Article 4

Vandekar, M.; Fadia, D.; Vaid, N.R.; and Doshi, V.: *Rapid Prototyping as an Adjunct for Autotransplantation of Impacted Teeth in the Esthetic Zone* (pp. 711-715)

13. Successful autotransplantation requires:
   a) the presence of viable periodontal ligament cells around the recipient site
   b) maintenance of the donor tooth inside the oral cavity during the entire surgery
   c) preparation of the recipient site in the exact size and shape of the donor tooth and root
   d) all of the above

14. Stereolithography produces 3D physical models by:
   a) solidifying one horizontal layer at a time
   b) using a light projector to cure an entire layer at a time
   c) extruding a resin that has been heated just beyond its melting point
   d) jetting a liquid resin out of nozzles and curing it with ultraviolet light

15. In the authors' technique, the digital files needed for conversion to a printable format are generated from:
   a) stereolithography
   b) a CBCT scan
   c) an intraoral digital scan
   d) a rapid prototype of the donor tooth

16. Advantages of autotransplantation of an impacted tooth in the esthetic zone include:
   a) use of the patient's own natural tooth in its anatomical site
   b) ability to subject the transplanted tooth to orthodontic tooth movement
   c) recovery of the transplanted tooth's proprioceptive function
   d) all of the above